

## What is *Microlejeunea victoriae* D.J.Carr?

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### Abstract

*Microlejeunea victoriae* D.J.Carr (Marchantiophyta: Lejeuneaceae) was described from a specimen collected in the 1950s on Wilsons Promontory, Australia. It is *Siphonolejeunea nudipes* (Hook.f. & Taylor) Herzog.

### Introduction

In 2005, in the Proceedings of the Royal Society of Victoria, D.J. Carr described two new bryophyte species from Victoria, including the liverwort *Microlejeunea victoriae* (Carr 2005). The type designation for *Microlejeunea victoriae* reads, *verbatim*:

*Holotype.* D.J. Carr and S.G.M. Carr, on the bark of trees (*Banksia serrata*) at Wilsons Promontory, Victoria. November 1954. Herb. Melb.

*Isotypes.* B.M.Nat.Hist, Herb, NSW, and Herb. of the Aust.Nat.Bot.Gard., Canberra.

There are two collections of *Microlejeunea victoriae* in the National Herbarium of Victoria, Melbourne (MEL-2296826, MEL-2296827), both on *Banksia* bark and both collected by D.J. Carr and S.G.M. Carr at Wilsons Promontory in November 1954. These are quite different in appearance and appear to be from different trees, although presumably from the same gathering. They are stored in ‘holotype’ and ‘isotype’ packets respectively, although Carr did not formally designate one or the other as the holotype in the protologue, did not designate an isotype for that herbarium, and did not annotate the specimens as such. At present both collections together must be considered to comprise the holotype, rather than holotype and isotype. Matt Renner (NSW) has advised that NSW did not receive an isotype of this species, and suggested that the packet labelled as an isotype in MEL may have been intended for distribution to NSW.

The material in the collection of the Australian National Botanic Gardens (CANB-769589, labelled ‘*Microlejeunea victoriensis*’) consists of a few pieces of *Banksia* bark with numerous stems of *Microlejeunea victoriae*. The collection date on the packet is 1955, in Carr’s handwriting, so this material cannot be part of the type material and is therefore not an isotype, nor even a paratype since no 1955 gathering is mentioned in Carr’s paper.

The material in the collection of the British Museum of Natural History (BM-867651) consists of a few minute fragments mounted on three glass slides, and is annotated ‘Australia. Victoria, Cannon’s Creek. DJ Carr & SGM Carr 29 October 1955’. Cannons Creek is on the northern side of Westernport Bay, more than 100 km from Wilsons Promontory. Both the date and the place of collection preclude this material from being an

isotype, and like the CANB material it is not a paratype. The only material suitable for assessment in relation to the identity of the species is therefore the material in MEL.

### Assessment of the species

Carr stated that, apart from his new species, the only other small Lejeuneaceae found on tree bark in Victoria are *Harpalejeunea latitans* (= *Microlejeunea latitans* (Hook.f. & Taylor) Heinrichs, Schäf.-Verw., Pócs & Dong) and *Nephrolejeunea hamata* Grolle (= *Austrolejeunea hamata* (Grolle) Pócs). Yet there are at least two other such species in Victoria — *Siphonolejeunea nudipes* (Hook.f. & Taylor) Herzog and *Siphonolejeunea elegantissima* (Steph.) Grolle — against which he did not compare his new species.

For this reason I examined the two specimens in the National Herbarium of Victoria (MEL) and the single specimen in the herbarium of the Australian National Botanic Gardens, Canberra (CANB). MEL-2296826 consists of several large pieces of bark with a few small stems of *Microlejeunea victoriae*. MEL-2296827 consists of several smaller pieces of bark on which there are many stems of *Microlejeunea victoriae* as well as the liverworts *Frullania clavata*, *Frullania probosciphora* and *Metzgeria decipiens*, the moss *Orthotrichum tasmanicum* and a lichen.

The salient features of *Microlejeunea victoriae* that Carr considered significant enough to differentiate it from other Lejeuneaceae, in particular *Microlejeunea latitans* (Hook.f. & Taylor) Heinrichs, Schäf.-Verw., Pócs & Dong and *Austrolejeunea hamata* (Grolle) Pócs, were (a) the development of multicellular discoid gemmae on the inner side of the ‘postical lobe’ (i.e. the inrolled lobule), (b) lobes of the underleaves not always widely divergent, (c) the presence of two teeth and a proximal papilla on the lobule, and (d) a lack of ocelli in the basal leaf cells.

I found no evidence of the gemmae Carr mentioned (supposedly arising from the inner surface of the lobule, a region not normally associated with gemma formation), and suspect that he had observed merely the remains of rotifers or other invertebrates that occur in some lobules in all three specimens.

The other three features mentioned by Carr are certainly found in the two specimens of *Microlejeunea victoriae*, but they are not unique in Lejeuneaceae. Furthermore, there are three significant features of the gametophyte he did not note: (a) a very narrow leaf base, with the point of attachment to the stem only one or two cells wide, (b) leaves that are clearly longer than wide and stand away from the substratum, and (c) bulging leaf cells, so that the leaves are microscopically crenulate in outline.

Because of this combination of features (other than ‘gemmae’) there can be no doubt that *Microlejeunea victoriae* is identical to *Siphonolejeunea nudipes* (Hook.f. & Taylor) Herzog, a common epiphyte in coastal woodlands in south-eastern Australia (Meagher & Fuhrer 2003) and known to occur on Wilsons Promontory (Meagher 1996). Carr seems to have been unaware of the existence of this species, even though it was well described in several of the references he cited in his bibliography (e.g. Scott 1985).

David Glenney (Landcare New Zealand, in litt.) noted that *Siphonolejeunea* is the correct genus for *Jungermannia nudipes* Hook.f. & Taylor because the underleaves are stalked. The required synonymy is therefore formalised as follows:

*Siphonolejeunea nudipes* (Hook.f. & Taylor) Herzog, Svensk Bot. Tidskr. 42: 231 (1948)

*Jungermannia nudipes* Hook.f. & Taylor, London J. Bot. 3: 568 (1844); *Austrolejeunea nudipes* (Hook.f. & Taylor) Grolle, J. Hattori Bot. Lab. 37: 257 (1973); *Nephrolejeunea nudipes* (Hook.f. & Taylor) L.Söderstr. & A.Hagborg in Pócs, Zhu, Söderström, Hagborg & von Konrat, Phytotaxa 202: 66 (2015).

*Microlejeunea victoriae* D.J.Carr, Proc. Roy. Soc. Victoria 117: 322 (2005) **syn. nov.**

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